

Application No.: 10/822397

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-22. (cancelled)

23. (new) A prism assembly which comprises an input prism, an output prism, and a polarizer between the input and output prisms, wherein:

(A) the input prism comprises:

- (i) a first surface which receives polarized illumination light from an illumination system;
- (ii) a second surface which is configured and arranged to provide polarized illumination light to an imaging device and to receive modulated reflected light from the imaging device, wherein the first surface and the second surface are along a same side of the input prism; and
- (iii) a third surface which faces the output prism;

(B) the output prism comprises:

- (i) a first surface which faces the third surface of the input prism; and
- (ii) a second surface which is configured and arranged to provide light to a projection lens to form a projected image; and

(C) the polarizer:

- (i) is between the third surface of the input prism and the first surface of the output prism; and
- (ii) reflects light having a first polarization direction and transmits light having a second polarization direction;

wherein the polarized illumination light has an optical path which comprises:

- (i) inward transmission through the first surface of the input prism;
- (ii) total internal reflection at the second surface of the input prism;
- (iii) outward transmission through the third surface of the input prism;
- (iv) reflection from the polarizer;

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- (v) inward transmission through the third surface of the input prism; and
- (vi) outward transmission through the second surface of the input prism.

24. (new) The prism assembly of Claim 23 wherein the second surfaces of the input and output prisms are parallel.

25. (new) The prism assembly of Claim 23 wherein the polarizer is a Cartesian polarizer.

26. (new) The prism assembly of Claim 23 wherein the polarizer is a wire grid polarizer.

27. (new) The prism assembly of Claim 23 wherein the polarizer is a multi-layer reflective polarizer.

28. (new) The prism assembly of Claim 23 wherein the second surface of the input prism comprises a coating for compensating for phase variations in the polarized illumination light which result from the total internal reflection of that light at the second surface.

29. (new) The prism assembly of Claim 23 wherein the polarizer is air spaced from the third surface of the input prism and the third surface comprises a coating for compensating for phase variations in the polarized illumination light which result from the transmission of that light through that surface.

30. (new) The prism assembly of Claim 23 wherein the input prism further comprises a fourth surface at which the polarized illumination light undergoes reflection before undergoing total internal reflection at the second surface.

31. (new) A prism assembly which comprises an input prism, an output prism, and a wire grid polarizer between the input and output prisms, wherein:

- (A) the input prism comprises:

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- (i) a first surface which receives polarized illumination light from an illumination system;
- (ii) a second surface which is configured and arranged to provide polarized illumination light to an imaging device and to receive modulated reflected light from the imaging device; and
- (iii) a third surface which faces the output prism;
- (B) the output prism comprises:
 - (i) a first surface which faces the third surface of the input prism; and
 - (ii) a second surface which is configured and arranged to provide light to a projection lens to form a projected image; and
- (C) the wire grid polarizer:
 - (i) is between the third surface of the input prism and the first surface of the output prism; and
 - (ii) reflects light having a first polarization direction and transmits light having a second polarization direction;

wherein the polarized illumination light has an optical path which comprises:

- (i) inward transmission through the first surface of the input prism;
- (ii) total internal reflection at the second surface of the input prism;
- (iii) outward transmission through the third surface of the input prism;
- (iv) reflection from the wire grid polarizer;
- (v) inward transmission through the third surface of the input prism; and
- (vi) outward transmission through the second surface of the input prism.

32. (new) The prism assembly of Claim 31 wherein the second surface of the input prism comprises a coating for compensating for phase variations in the polarized illumination light which result from the total internal reflection of that light at the second surface.

33. (new) The prism assembly of Claim 31 wherein the wire grid polarizer is air spaced from the third surface of the input prism and the third surface comprises a coating for compensating for phase variations in the polarized illumination light which result from the transmission of that light through that surface.

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34. (new) The prism assembly of Claim 31 wherein the input prism further comprises a fourth surface at which the polarized illumination light undergoes reflection before undergoing total internal reflection at the second surface.

35. (new) The prism assembly of claim 31, wherein the wire grid polarizer is disposed on the third surface of the input prism.

36. (new) The prism assembly of claim 31, wherein the wire grid polarizer is disposed on the first surface of the output prism.

37. (new) A prism assembly which comprises an input prism, an output prism, and a polarizer between the input and output prisms, wherein:

(A) the input prism comprises:

- (i) a first surface which receives polarized illumination light from an illumination system;
- (ii) a second surface which is configured and arranged to provide polarized illumination light to an imaging device and to receive modulated reflected light from the imaging device;
- (iii) a third surface which faces the output prism; and
- (iv) a phase control coating disposed on the second surface to compensate for phase variations in the polarized illumination light produced at the second surface;

(B) the output prism comprises:

- (i) a first surface which faces the third surface of the input prism; and
- (ii) a second surface which is configured and arranged to provide light to a projection lens to form a projected image; and

(C) the polarizer:

- (i) is between the third surface of the input prism and the first surface of the output prism; and

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- (ii) reflects light having a first polarization direction and transmits light having a second polarization direction;

wherein the polarized illumination light has an optical path which comprises:

- (i) inward transmission through the first surface of the input prism;
- (ii) total internal reflection at the second surface of the input prism;
- (iii) outward transmission through the third surface of the input prism;
- (iv) reflection from the polarizer;
- (v) inward transmission through the third surface of the input prism; and
- (vi) outward transmission through the second surface of the input prism.

38. (new) The prism assembly of Claim 37 wherein the polarizer is air spaced from the third surface of the input prism and the third surface comprises a coating for compensating for phase variations in the polarized illumination light which result from the transmission of that light through that surface.

39. (new) The prism assembly of Claim 37 wherein the polarizer is a Cartesian polarizer.

40. (new) The prism assembly of Claim 37 wherein the polarizer is a multi-layer reflective polarizer.

41. (new) An image projection system comprising:

- (I) an illumination system which produces linearly polarized illumination light having a first polarization direction;
- (II) a reflective imaging device which receives linearly polarized illumination light and produces modulated reflected light by changing the linear polarization direction of selected portions of the received light to a second linear polarization direction;
- (III) a projection lens; and
- (IV) a prism assembly which comprises an input prism, an output prism, and a polarizer between the input and output prisms,

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wherein:

- (A) the input prism comprises:
 - (i) a first surface which receives linearly polarized illumination light from the illumination system;
 - (ii) a second surface which provides linearly polarized illumination light to the imaging device and receives modulated reflected light from the imaging device; and
 - (iii) a third surface which faces the output prism;
- (B) the output prism comprises:
 - (i) a first surface which faces the third surface of the input prism; and
 - (ii) a second surface which provides light to the projection lens to form a projected image; and
- (C) the polarizer:
 - (i) is between the third surface of the input prism and the first surface of the output prism; and
 - (ii) reflects light having the first linear polarization direction and transmits light having the second linear polarization direction;

wherein the linearly polarized illumination light has an optical path which comprises:

- (i) inward transmission through the first surface of the input prism;
- (ii) total internal reflection at the second surface of the input prism;
- (iii) outward transmission through the third surface of the input prism;
- (iv) reflection from the polarizer;
- (v) inward transmission through the third surface of the input prism; and
- (vi) outward transmission through the second surface of the input prism.

42. (new) The prism assembly of Claim 41 wherein the polarizer is a Cartesian polarizer.

43. (new) The prism assembly of Claim 41 wherein the polarizer is a wire grid polarizer.

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44. (new) The prism assembly of Claim 41 wherein the second surface of the input prism comprises a coating for compensating for phase variations in the linearly polarized illumination light which result from the total internal reflection of that light at the second surface.